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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David B. Small

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EXAMINER

HADIZONOOZ, BANAFSHEH

ART UNIT

PAPER NUMBER

3715

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/758,779	Applicant(s) SMALL ET AL.	
	Examiner Banafsheh Hadizonooz	Art Unit 3715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,13-24 and 26-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,13-24 and 26-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

In response to the amendment filed on 05/10/2010, claims 1, 3-9, 13-24, 26-37 are pending. Claims 35-37 have been newly added. This action is made Final.

Allowable Subject Matter

Claims 19, 20, 24, 28 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Patentability is seen in, although not limited to the claimed feature of " the control circuit is configured to select among a plurality of possible human finger presences sensed simultaneously by the scanning circuit, a single most northern possible human finger presence at the probable user input". The prior art of record does not fairly disclose, teach, or suggest the combination of these features.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-9, 13-17, 29, 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al.(US 5,831,600) in view of Sims (US 6,657,616 B2) and further in view of Ohara et al. (US 5,485,176).

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[Claim 1, 14, 15]: Inoue discloses a system comprising a scanning circuit (e.g. Oscillation circuit) that scans the circuit at the frequencies defined by the control system; a control circuit (e.g. CPU) in communication with the signal scanning circuit, and AC/DC converter (See Figure 1), wherein the system is configured to detect a human finger when the finger enters the electric field (See Abstract and Col.3, 41-Col.4, 5 and claim 1). Inoue further discloses that the input device comprises a matrix of conductive lines arranged as a plurality of spaced apart column conductive lines separated by an electrically insulative sheet from row of conductive lines wherein the scanning signal is input into the specific column conductive line according to a predetermined input sequence as directed by a first and second coordinated control signal outputted by a control circuit (see Col.4, 60-Col.5, 13). Inoue does not specifically disclose that the scanning circuit works at radio frequency range. However, Sims discloses a capacitive touch circuit comprising a series of conductors and RF signal receiver, wherein the decrease in the received signal strength is detected as the result of the presence of a stylus or finger (See Col.2, 51-Col.3, 20). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Inoue's invention to include the radio frequency scanning feature of Sim's invention in order to design a system that is more sensitive to touch and less prone to malfunctioning.

Inoue/Sims do not disclose an audible output device in communication with the control circuit that outputs audible messages. However, Ohara discloses an information display system comprising a matrix of conductive lines (See Fig.3) wherein upon selection of an indicia by a user the audio outputs associated with said indicia is

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retrieved from the memory and outputted through a speaker (See Abstract and fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art to modify Inoue/Sims invention according to the teachings of Ohara to incorporate the audible output device in order to design a system that can be used for educational purposes.

[Claim 3]: Regarding claim 3, Sims further discloses a RF scanning circuit comprising a RF oscillator (See Col.3, 62-64).

[Claims 4, 5]: Regarding claims 4 and 5, Inoue further discloses that the scanning circuit comprises an input/output switching device (e.g. multiplexer) which routes the signal generated by the oscillator to each of the conductive lines according to the predetermined sequence, and is in communication with the control circuit (e.g. CPU) and the conductive lines (Col.1, 60-Col.2, 15).

[Claims 6-9, 29]: Regarding claims 6 and 9 Inoue further discloses wherein the scanning circuit that is connected to amplifying and filtering circuit before routing the signal to control circuit for analysis. Inoue does not specifically disclose that the filtering circuit is a band pass filter. However, it would have been obvious to one of ordinary skill in the art to use a band-pass filter before routing the signal to A/D converter and the control circuit in order to limit the signal frequency to a certain range and create a clear digital signal.

[Claim 7]: Regarding claim 7, Inoue discloses the amplified and filtered coupled RF signals that are AC voltage sine wave signals (See [0046]).

[Claims 8, 17]: With respect to claims 8, and 17, Sims teaches amplifying and filtering the coupled RF signal and AC to DC converter (See figure 1, element 21).

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[Claim 13]: Regarding claim 13, Inoue discloses a microcontroller (e.g. host computer).

[Claims 16]: Regarding claim 16, Inoue further teaches analyzing one or more electrical characteristics of the coupled RF signal after an RF signal is input into all of the column conductive lines (See Col.5, 50-59).

[Claims 30-32]: Regarding claim 30, Inoue/Sims discloses inputting predetermined RF frequencies into the conductive lines and outputting a RF signal at the predetermined frequency (See 'Inoue' Col.1, 60-Col.2, 34). Inoue further discloses that the memory stores the received signals from the conductive lines and control circuit (See Col.6, 27-30) and uses the values as a base line to compare with the signals that are received later (See Col.6, 31-40).

Claims 18, 21-23, 26, 27, 33, 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al.(US 5,831,600) in view of Sims (US 6,657,616 B2) further in view of Ohara (US 5485176) as applied to claim 1 above and further in view of Westerman et al. (US 6,323,846).

[Claims 21, 23, 26 and 33]: Inoue discloses a system comprising a frequency scanning circuit; a control circuit (e.g. CPU) in communication with the signal scanning circuit and AC/DC converter (See Figure 1), wherein the system is configured to detect a human finger when the finger enters the field (See Abstract, Col.3, 41-Col.4, 5 and claim 1). Inoue further discloses a memory in communication with the control circuit (See Col.6, 22-30 and figure 3, S11). Inoue further discloses that the input device comprises a matrix of conductive lines arranged as a plurality of spaced apart column

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conductive lines separated by an electrically inclusive sheet from row of conductive lines wherein the scanning signal is input into the specific column conductive line according to a predetermined input sequence as directed by a first and second coordinated control signal outputted by a control circuit (see Col.4, 60-Col.5, 13). Inoue also discloses a protective film that is adhered to the upper and lower sides of the scanning circuit (See figure 2 and Col.4, 20-30). Inoue does not specifically disclose that the sheet is 0.06 inches or more thick. However, the applicant has not disclosed that the specific thickness of the sheet provides any unexpected result. Moreover, the system of Inoue would work equally well with a protective sheet with thickness of less than 0.06. Therefore, it would have been obvious to one of ordinary skill in the art to modify Inoue's invention to include the protective sheet with the thickness of 0.06, because such modification is considered to be a matter of design choice. Inoue further does not specifically disclose that the scanning circuit works at radio frequency range. Sims discloses a capacitive touch circuit comprising a series of conductors and RF signal receiver, wherein the decrease in the received signal strength is detected as the result of the presence of a stylus or finger (See Col.2, 51-Col.3, 20). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Inoue's invention to include the radio frequency scanning feature of Sim's invention in order to design a system that is more sensitive to touch and less prone to malfunctioning.

Inoue/Sims do not disclose an audible output device in communication with the control circuit that outputs audible messages. Ohara discloses an information display system comprising a matrix of conductive lines (See Fig.3) wherein upon selection of an

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indicia by a user the audio outputs associated with said indicia is retrieved from the memory and outputted through a speaker (See Abstract and fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art to modify Inoue/Sims invention according to the teachings of Ohara to incorporate the audible output device in order to design a system that can be used for educational purposes.

Inoue/Sims/Ohara does not specifically disclose a control circuit to detect and select among the plurality of human fingers. Westerman discloses a method for integrating manual input on a touch screen display, wherein the system is capable of detecting the presence of multiple fingers (See Abstract and, figure 17, Col.9, 37- col.10 38). Therefore, it would have been obvious to one of ordinary skill in the art to modify Inoue/Sims/ Ohara's invention based on the teachings of Westerman in order to design an interactive display system that is suitable for young children who frequently touch the display screen with multiple fingers.

[Claims 18 and 19]: Regarding claims 18 and 19, Westerman further discloses the control circuit is configured to configure and analyze a single human finger presence among a plurality of possible human finger presences detected by the scanning circuit(See Abstract and Col.9, 37- col.10 38).

[Claims 22 and 27]: Regarding claims 22 and 27, Ohara discloses an interactive book that retrieves audible messages from memory in response to selection of indicia (See Abstract and fig.1). Ohara does not specifically teach providing instructions to the user. However, since Ohara's system is directed to children, it would have been obvious to include some sort of instruction to direct the child to the next action.

Response to Arguments

Applicant argues that neither Inoue nor Sims is directed to an interactive book reading system responsive to a human finger presence and configured to detect a human finger when the finger enters the electric field. Examiner respectfully disagrees. Examiner notes that both Inoue and Sims are directed to a touch-sensitive display device which is the main component of the interactive book reading system of the instant application. Applicant further argues that the cited paragraphs in Inoue's invention specifically disclose that a coordinate input object....brought into contact with an operation area or tablet and that the cited portions of Inoue do not teach detection by the mere presence of the finger without contact. Examiner notes that claim 1 in the instant application discloses "...configured to detect the presence of a human finger when the finger enters the RF field..." and that if the finger disclosed in Inoue's invention has touched the tablet, the finger has clearly entered the RF field. Examiner further refers the applicant to Col.3, 1-20 of Sims reference, where it teaches that the RF coupler detects the presence of a human finger as soon as the finger is placed proximate the RF coupler, which means the finger does not have to be touching the surface in order to be detected.

Applicant further argues that there is no reason that one of ordinary skill in the art would only take only radio frequency operation from Sims to incorporate into Inoue where Sims is an improvement over prior art devices. Examiner respectfully disagrees. Examiner notes that seems may be an improvement over prior art devices, however

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people of ordinary skill in the art may have different views in improving an existing device. For example, one of ordinary skill in the art would have been motivated to substitute the Oscillator of Inoue's invention with an RF oscillator simply because RF oscillators operate on much faster rate (30 KHz 300 GHz) as opposed to 200-300 HZ for a generic oscillator. Therefore, the scanning circuit is capable of scanning the matrix at a much faster rate, which increases the possibility of detecting a coordinate object and/or a finger.

Examiner further notes that the independent claims 1 and 33 are apparatus claims and that the prior arts of record disclose every component disclosed by the abovementioned claims (Compare figure 1 of Inoue's invention with Figure 6 of the instant application). While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

Conclusion

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Banafsheh Hadizonooz whose telephone number is 571-272-1242. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571) 272- 7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BH

/Cameron Saadat/
Primary Examiner, Art Unit 3715